

Remarks

The various parts of the Office Action (and other matters, if any) are discussed below under appropriate headings.

Obviousness-Type Double Patenting

Claims 1-12 and 16-20 stand rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1-19 of commonly-owned U.S. Patent No. 6,731,970. It appears the Examiner has maintained the previously-stated double patenting rejection verbatim without addressing the comments of the last reply.

The Examiner asserts that claims 1-12 and 16-20 “are not patentably distinct while not identical in dependency, contain no additional subject matter nor already in the claims of U.S. Patent No. 6,731,970.” In addition, the Examiner states, “[t]he aforementioned patent teaches all the limitations of claim 2 as described above but does not teach wherein at least one implant includes one or more coils.”

MPEP 804 instructs that, “[a]ny obviousness-type double patenting rejection should make clear: (A) The differences between the inventions *defined by the conflicting claims* – a claim in the patent compared to a claim in the application. . .” (Emphasis added).

The foregoing obviousness-type double patenting rejections are not understood. Again, the Examiner has not explained how the subject matter of the noted claims would be considered obvious to the skilled person in view of claims 1-19 of the ‘970 patent and/or Fabian. The only supportive discussion relates only to claim 2. Clarification is needed in order for applicants to provide an appropriate response to the obviousness-type double patenting rejections. The obviousness-type double patenting rejections, as presently stated, are improper and should be clarified, if not withdrawn.

Claim Rejections - 35 USC § 103

Claim 1 recites a method for detecting a target volume in radiotherapy or radiosurgery that includes, *inter alia*, positionally referencing at least one implant in the vicinity of the target volume, inductively stimulating the at least one implant, detecting

emission from the at least one inductively stimulated implant, and determining position of the at least one inductively stimulated implant based on the detected emission.

Page 4 of the Office Action asserts that Cosman teaches “determining the current position of the target volume based on the determined position of at least one implant (fig. 4; col. 11 lines 6-24).” Cosman has not been found to make use of implants, let alone disclose determining a current position of the target volume based on the determined position of at least one implant. Rather, Cosman is understood to disclose use of *external markers*, e.g., markers (20), (21), (23), (24), and an optical camera system, e.g., camera system (C), including cameras (17), (18) and (19).¹

In addition, at col. 11, lines 6-24, on which the Examiner relies in rejecting claim 1, Cosman discloses,

[o]nce the patient position translations described above (*based on external landmarks*) have been done, then the internal anatomy, which may be more closely represented by, for example, the bony structures within the body, can be further used to verniate and/or qualify the position of a desired internal target to isocenter. (Emphasis added).

Accordingly, the Examiner’s assertion regarding what is disclosed by Cosman is unsupported by the Cosman. For at least this reason, the rejection of claim 1 should be withdrawn.

Page 4 of the Office Action recognizes that Cosman fails to disclose positionally referencing at least one implant and inductively stimulating at least one implant.² The Office Action turns to Eggers to cure the deficiencies of Cosman with respect to claim 1. Page 4 of the Office Action asserts,

Eggers et al. teach the wherein a target within a volume may be identified, inter alia, by orientation as well as position (par. 0183)

It would have been obvious to one of ordinary skill in the art at the time of the invention to have modified the apparatus and method as taught by Cosman and to have incorporated the teachings of Eggers et al. in order to provide for accurate location of implant sensors within tissue.

It is respectfully submitted that the rejection is deficient because it does not explain how a skilled person would modify the device and method disclosed in Cosman, based on Eggers, to arrive at the invention recited in claim 1. For at least this reason, the rejection of claim 1 and dependent claims 2-18 should be withdrawn.

¹ See, for example, col. 2, lines 21-22, disclosing, “*an optical camera apparatus functions in cooperation with a LINAC machine . . .*” (Emphasis added).

² As is noted above, Cosman is understood to deal with external markers.

In addition, the evidence of record does not establish a reasonable basis why a skilled person would even look to Eggers to supplement the teachings of Cosman. Eggers is understood to deal with a method and apparatus for heating patient tissue and measuring the temperature of the heated tissue. It is unclear from the Office Action as well as the evidence of record why the skilled person would even consult Eggers. In this regard, the Examiner is reminded that “[t]he mere fact that references can be combined or modified does not render the resultant combination obvious . . .” MPEP 2143.01 III.

Even assuming *arguendo* that the skilled person would consult Eggers to cure the deficiencies of Cosman, Eggers has not been found to cure the deficiencies of Cosman with respect to claim 1. Paragraph [0183] of Eggers, which is mentioned in the Office Action, discusses use of a combination implant including a heater component and a temperature sensor component.³ While Eggers makes passing mention of positioning a combination heater/temperature sensor implant, Eggers has not been found to disclose a method for positioning the combination heater/temperature sensor implant or for detecting a target volume by positionally referencing the combination heater/temperature sensor implant.

Eggers has not been found to support the Examiner’s rejection, because Eggers has not been found to include disclosure that a skilled person would use to supplement the disclosure of Cosman to arrive at the invention recited in claim 1. For at least this additional reason, the rejection of claim 1 and dependent claims 2-18 should be withdrawn.

In addition, dependent claims recite features that have not been found to be disclosed by Cosman, taken alone or in combination with Eggers. For example, dependent claim 3 recites a method that includes after detecting the position of the at least one introduced implant, moving the patient to a therapy device; at the therapy device, generating a dynamic electromagnetic field in the vicinity of but outside the patient, wherein the at least one implant inductively absorbs energy via the electromagnetic field and the at least one implant at least partially re emits the absorbed energy in the form of a second electromagnetic signal; detecting the second electromagnetic signal outside the patient.

³ Also see, for example, Eggers at paragraph [0190].

In rejecting claim 3, the Office Action points to col. 4, lines 62-67 of Cosman, which states,

[r]egarding the camera system C, the individual optical cameras 17, 18 and 19 essentially "look" at the position and orientation of the patient P, that is, viewing the volume containing the patient P and the apparatus as explained above. The markers 20, 21, 23 and 24 can be "seen" by the cameras to track marker positions . . .

It is unclear how this portion of Cosman discloses the claim 3 recitation of at the therapy device, generating a dynamic electromagnetic field in the vicinity of but outside the patient, wherein the at least one implant inductively absorbs energy via the electromagnetic field and the at least one implant at least partially re emits the absorbed energy in the form of a second electromagnetic signal; detecting the second electromagnetic signal outside the patient.

Accordingly, it is respectfully submitted that the rejection of claim 3 is unsupported by Cosman and, therefore, should be withdrawn.

Claim 19 recites a method for recording diagnostic two-dimensional or three-dimensional image sets in accordance with breathing that includes, *inter alia*, introducing at least one implant into a patient in the vicinity of a target volume, inductively stimulating the at least one implant, and detecting emission from the at least one inductively stimulated implant.

As stated above, page 4 of the Office Action recognizes Cosman's failure to disclose inductively stimulating at least one implant and detecting emission of the inductively stimulated implant. Further, Cosman has not been found to disclose or suggest detecting emission from an inductively stimulated implant and determining a position of the at least one implant based on detected emission.

As is discussed above with respect to claim 1, the rejection based on Eggers in combination with Cosman should be withdrawn for at least three reasons. The rejection is deficient in that it does not explain how a skilled person would modify the device and method disclosed in Cosman, based on Eggers, to arrive at the invention recited in claim 19. Also, the evidence of record does not establish a reasonable basis why a skilled person would even look to Eggers to cure the deficiencies of Cosman. In addition, Even assuming *arguendo* that the skilled person would consult Eggers, Eggers has not been found to cure the deficiencies of Cosman with respect to claim 19.

For at least these reasons, the rejection of claim 19 and dependent claim 20 is not supported and therefore should be withdrawn.

Telephone Interview

In the interests of advancing this application to issue and compact prosecution, it is respectfully requested that the Examiner telephone the undersigned to discuss any of the foregoing with which there may be some controversy or confusion or to make any suggestions that the Examiner may have to place the application in condition for allowance.

Conclusion

In view of the foregoing, request is made for timely issuance of a notice of allowance.

Respectfully submitted,

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